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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,780	10/24/2001	Yasuo Kitaoka	10873.826US01	3107

7590 03/26/2004

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EXAMINER
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VY, HUNG T

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/041,780

Applicant(s)

KITAOKA ET AL.

Examiner

Hung T Vy

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.



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### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. In response to the amendment filed on 02/25/2004, claims 1-22 are pending in this application.

### **Claim Rejections - 35 USC § 112**

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: beam splitter and signal controller because how the detector detects only one light of the two lights (harmonic and fundamental) emitted from converting device and how a desire wavelength being controlled after the first light which passes through the wavelength converting device. Further, the claims recite converting the wavelength of a part of the first light by half but the claim fails to define how converting a part of the first light.

### **Claim Rejections - 35 U.S.C. § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1- 7, 9, 11-12, and 17-18 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamamoto et al., U.S. patent No. 5,936,985 in view of Eaton et al., U.S. Patent No. 4,939,388.

Regarding claims 1 and 6, Yamamoto et al. discloses a coherent light source comprising: a source emitting light (42) having a first wavelength; and a wavelength converting device for converting (22a) the wavelength of the first light by half (See column 2, line 2-68), the wavelength converting device (22a) converting the first light into harmonic light having a second wavelength (P2) (See fig 14,15), wherein the wavelength of the first light is detected (28) and controlled to controlled to a desired wavelength, so that the wavelength of the second light is controlled (See column 9, line 44-56) but Yamanoto et al. does not disclose the first light pass through the wavelength device is detected. However, Eaton et al. discloses the light is spitted to 2 the light and all the two light are detected (8,10) (see fig. 1 and column 3, line 46-65). It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify Yamamoto to have the first light pass through the wavelength device is detected as taught by Eaton et al. because those skilled in the art will recognize that such modification and variations can be made to get desire the wavelength and prevent the cross talk signal without departing from the spirit of the invention.

Regarding claims 2-4, Yamamoto et al. discloses the coherent light source, wherein the first light is emitted from a semiconductor laser having a wavelength variable function (See column 3, line 25-34), the semiconductor laser comprises an active region (44), a phase control region (41) and a distributed Bragg reflection (DBR) region (40). (See column 9, line 12-22) and the desired wavelength is within a phase-matching wavelength tolerance of the wavelength converting device (See column 5, line 20-34), and a variation in wavelength of the first light with a change in operating current thereof is compensated by changing current to be input to the phase control region or the DBR region (See column 5, line 47-63).

Regarding claim 7, Yamamoto et al. disclose the coherent light source, wherein a means for separating (Splitter 27) the fundamental light and the harmonic light (See fig 1).

Regarding claims 5 and , Yamamoto et al. disclose a first mechanism that detects the wavelength of the first light (28) and control it to a desired wavelength and with admitted from applicant that second mechanism that control a phase-matching wavelength of the wavelength converting device to the wavelength of the first light is DBR region and active region of laser so Yamamoto et al. disclose the DBR region (40) and active region(42) and phase control (41) (See fig 1 and column 8, line 48-63).

Regarding claim 18, Yamamoto et al. disclose the coherent light source, wherein a means for separating (Splitter 27) the fundamental light and the harmonic light (See fig 1).

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Regarding claims 9,11-12, Yamamoto et al. disclose the wavelength-converting (22a) device has an optical waveguide (2), and the diffraction grating is formed on the optical waveguide (See fig 1), the photo-detector (28) is provide on one side of a substrate (1) on which the optical waveguide (2) is formed (see fig 1).

4. Claims 8,10, 13-16, 19-22 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamamoto et al., U.S. patent No. 5,936,985 and Eaton et al., U.S. Patent No. 4,939,388 in view of Kitaoka et al., U.S. Patent No. 5,960,259.

Regarding claim 8, 10 and 19, Yamamoto et al. disclose all limitation of claim but Yamamoto et al. dose not disclose a diffraction grating. However, Kitaka et al. disclose diffraction grating (in wavemeter 105) (See fig. 1).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify having diffraction grating because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention. It would have been obvious to provide Yamamoto et al. with the limitations as taught or suggested by Yitaoka et al.

Regarding claims 13,15-16 and 20-22, Yamamoto et al. discloses the claimed invention except for a cesium (Cs) gas cell. It would have been obvious to one having ordinary skill in the art at the time the invention was made to a cesium (Cs) gas cell, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

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Regarding claim 14, Kitaoka et al. disclose the coherent light source, wherein the phase-matching wavelength of the wavelength converting device is varied by changing a refractive index of the wavelength converting device With electrooptic effect or temperature change (See column 4, line 1-8).

### **Response to Arguments**

5. Applicant's arguments filed 02/25/2004, with respect to applicant's argument have been fully considered and are persuasive. The previous of rejection has been withdrawn. However, the claims fail to comply with 35 U.S.C 112, 2<sup>nd</sup> paragraph (See rejection above).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung VY whose telephone number is (571) 272-1954. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (571) 272-1941. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

  
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March 14, 2004